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COSTS OF INSTRUCTION IN NORMAL SCHOOLS OF THE SOUTH AND OF MISSOURI[1]

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The president, the dean, or a head of a department in a normal school is always face to face with Herbert Spencer's question: "What knowledge is of most worth?" It arises in various forms. He or all of them must decide whether a class sure to enrol a small number can be given, whether a large class can be run in sections, etc. He must decide whether a laboratory period shall be counted as equal to a recitation period or as only half that value and paid for accordingly. Often the choice must be made as to whether an advanced class sure to enrol only a few, or a lower class certain to be crowded shall be given in the remaining hour of teaching to be done by a particular instructor. Increases in salary or assistance, the number of hours a week a man shall teach, and so on, all come in here. But in attempting to solve any of these questions for practical purposes, the administrator must very shortly face the problem of relative costs of instruction in various departments.

Similar problems face administrators in all other kinds of schools. For many of them data on relative costs have been published in various reports and school surveys. For instance, Superintendent Spaulding gave such data for high-school work at Newton, Massachusetts, in the *Proceedings of the National Education Association* for 1913 (pp. 259–79), and Professor Bobbitt had an article on instruction costs in high schools in the *School Review* for October, 1915.

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[1] This article presents the results of investigations in the author's seminar on normal-school administration at the George Peabody College for Teachers. A preliminary study of three normal schools was made in 1915 by Professor S. J. Phelps, of the Springfield, Missouri, Normal School. In 1916 Mr. A. E. Phillips, formerly superintendent of schools at Arkadelphia, Arkansas, took up the study where Professor Phelps left it. Mr. Phillips elaborated the method and secured fresh data from the fifteen schools reported on. The information blank and tables here presented are those of Mr. Phillips. A brief report on the whole was given at the Kansas City meeting of the College Teachers of Education.

But to date there has been practically nothing of the kind for normal schools, so far as the author knows. This study is an attempt to show conditions in fifteen state normal schools in the southern states and in Missouri.

In the fall of 1916 data were secured by sending to the presidents of the normal schools sufficient cards like the following for each person doing any teaching in his school to fill out one. All schools in the South likely to be interested were asked to co-operate.

Subject Taught
Salary for Year Exclusive of Summer Salary
Sex of Teacher

Name of Classes Taught during Fall Term	No. of Students Counted as Belonging to Each Class November 1	No. Recitations in Each Class per Week. Indicate Laboratory Periods Separately	Length in Minutes of Each Recitation. Length of Laboratory Periods

No. Weeks in Regular School Year
No. Weeks in Summer School
Do You Teach in Summer School?
How Much Extra Salary for Summer Work Do You Get?
How Much of Your Salary is for Work Other Than Teaching?

For various reasons some did not answer, but eventually fifteen state normal schools from all over the region answered. These schools were in the following cities: Florence, Ala.; Livingston, Ala.; Troy, Ala.; Conway, Ark.; Natchitoches, La.; Towson, Md.; Cape Girardeau, Mo.; Springfield, Mo.; Greenville, N.C.; Rock Hill, S.C.; Johnson City, Tenn.; Murfreesboro, Tenn.; Huntsville, Tex.; San Marcos, Tex.; Farmville, Va.

From the replies the cost of instruction in each subject was computed on the basis of 1,000 "student hours." A "student hour" means the work involved in teaching a student one hour. Thus 1,000 "student hours" would mean the work involved in teaching 40 students 25 hours, or 100 students 10 hours, or 10 students 100 hours, etc. This unit was chosen because it had been used by Professor Bobbitt and because it is large enough to make a sum worth considering from the administrative standpoint. But as practically all periods were 45 or 50 minutes in length, or doubles of these, no attempt was made to turn them into 60-minute hours as Professor Bobbitt did. For purposes of this study there can be no appreciable difference between a 45-minute period and one of 50 minutes. The teacher of the 45-minute period would not teach any more classes a day than the one who teaches 50-minute periods. If there were any very short periods, as in music, these were changed into an equivalent of whatever was the typical period in the school, say 45 minutes. A laboratory period was counted as equal to the same length of time as a recitation period because the preparation on the part of the teacher, grading of notebooks, etc., probably makes it take as much of his time. This seems all the more just, as will be seen later, because of the fact that even on this basis the laboratory subjects do not cost so much as do many purely recitation subjects.

To find the cost of 1,000 "student hours" in a class, the proportionate part of the instructor's salary for one week was taken. That is, if the class recited 5 periods and he taught 25 periods, one-fifth of his salary was chargeable to that class. If he had 30 pupils in it, the work represented 150 "student hours." The cost of 1 "student hour" then was $\frac{1}{150}$ of the cost of that class for one week. In combining several classes in a department, or classes in different departments taught by different instructors, the average of the proper "student hour" costs was taken. After all figuring, all results were put on the basis of the cost of 1,000 "student hours."

Then the costs in the various schools were assembled as in the accompanying tables, each school being denominated by the same Roman numeral throughout. In order to secure the data, it was necessary to promise that the name of the school would not be

TABLE I

Cost of Instruction per 1,000 "Student Hours"

(First column represents the school; second column, the cost)

English	
II	$110
IV	83
III	83
I	80
VI	77
XI	71
V	69
VIII	67
XV	56
VII	55
XIII	54
IX	42
XIV	40
X	36
XII	31

Latin	
II	237
XIII	224
VIII	221
III	184
XI	176
XIV	170
VI	160
IV	150
I	147
VII	106
IX	70
XV	61

French	
II	243
XIV	90
XI	89
VII	71

Spanish	
VII	217
VI	120
VIII	89

German	
II	$542
XI	400
III	224
VII	194
VI	167
I	142
VIII	80

Physics	
IX	136
VIII	103
I	94
III	81
XV	80
V	78
X	63
XII	61
II	59
XIV	59
IV	59
VI	52
XI	47
VII	44

Chemistry	
III	92
XIII	87
VIII	85
I	80
X	80
IV	80
XV	74
XII	67
VI	65
VII	57
II	52
V	45
XI	41

Agriculture	
VII	$331
II	321
III	216
XIV	150
XIII	138
VIII	126
IV	121
VI	110
I	94
IX	71
XI	70

Biology	
XIV	162
II	144
VIII	85
VII	83
III	69
VI	60
XII	53
V	43
IV	43
X	42
XV	41
XIII	38

Geography	
I	115
XI	113
XIII	111
V	91
II	87
X	81
XII	40
IX	39
VIII	29

Geology	
II	174
IV	154

Astronomy	
IX	$121

Home Economics	
III	194
VII	115
XIII	89
II	88
VIII	85
IV	82
XI	79
XIV	73
XV	70
I	64
VI	60
X	58
V	52
IX	53
XII....(?)	15

Mathematics	
III	141
II	135
VI	107
I	104
X	96
IV	75
XIII	74
XI	70
XIV	67
V	67
VIII	63
XII	57
IX	55
VII	55
XV	49

TABLE I—*Continued*

Drawing	
II	$ 90
VI	82
IV	81
VII	77
I	57
III	54
V	52
XIII	51
IX	51
VIII	48
XIV	42
X	40
XI	38
XV	31

Manual Training	
V	228
XIV	224
XI	134
II	130
VIII	115
VI	106
III	106
XIII	78
VII	58
XII	57
IX	55

Commerci	
II	$374
IX	81
III	67
VII	59

History	
I	129
II	125
III	102
IV	88
V	82
VI	81
VII	70
VIII	62
IX	54
X	51
XI	49
XII	40
XIII	36
XIV	30
XV	29

Sociology	
VII	314
VIII	97
VI	90
X	80
XIV	60
V	31

Economics	
XI	$158
XIV	65
VIII	60

Education	
III	91
XIII	85
I	84
VI	81
X	74
VII	74
VIII	65
II	60
V	59
IV	59
XIV	46
XI	46
IX	43
XV	41
XII	25

Reading	
VI	110
VIII	59
VII	51
IX	43
II	40

Penmanship	
XI	$139
IV	65
XIV	47
I	31

Physical Training	
III	55
II	52
XIV	46
VI	41
IX	39
XV	39
VII	31
VIII	30

Music	
II	127
IX	78
V	71
XII	66
XIV	55
IV	54
VI	53
VIII	52
VII	49
X	49

revealed. The numerals here have no relation whatever to the order of schools in the list of those participating.

The median or middle cost in each table was taken to form the table of median costs given below. Of course statistically the median is not always safe in such small groupings, but greater accuracy would be of no special advantage here anyway.

To any normal-school man many significant things will soon appear from a study of these figures. For instance, in many of the subjects some schools pay three times as much as others for what is presumably the same work. All this variation cannot be said to be due to differences in quality of work. Some of the best normal schools are very high in some subjects and very low in others. For example, School I, which is one of the best in the list, is high in history, English, physics, geography, drawing, and chemistry, but low in Latin, home economics, agriculture, and penmanship. In the schools as a whole it may be noted that some subjects cost three times as much as others that presumably are of the same general nature.

TABLE II

MEDIAN COST OF INSTRUCTION PER 1,000 STUDENT HOURS (ALL SCHOOLS)

Subject	Cost
German	$194
Latin	165
Agriculture	123
Spanish	120
Manual Training	106
French	89.50
Quartile	
Geography	87
Sociology	85
Commercial	74
Chemistry	74
Home Economics	73
Mathematics	70
Median	
English	67
Economics	65
Physics	62
History	62
Education	60
Physiology	60
Quartile	
Biology	56.50
Penmanship	56
Music	54.50
Drawing	51.50
Reading	51
Physical Training	40

It is of course impossible for anyone to tell from these figures alone just what is the cause of any extreme variation in cost in any subject in any school. But the president of that school may well discuss with his faculty such things as these: (1) Is low cost due to large classes? to low-priced teachers? to women teachers paid a lower salary than men doing similar work in other departments? to too heavy a teaching program for the instructor? (2) Is high cost due to too small classes? to the fact that the subject is new and has not been properly pushed or called to the attention of students? to an unwise distribution of a high-priced teacher's time?

Upon the answers to these should depend administrative decisions in such problems as the following: Should a given teacher have special assistance for classes? Should he be asked to take an extra class or to do extra committee work because his regular classes have small enrolments? Should a given class with small enrolment be continued or dropped so that the instructor may take some other class with a normal enrolment? Is the good or high-priced instruction equitably distributed through all departments? Should the advisory staff be instructed to divert students from certain crowded courses into others that are far below economical enrolments? Should the salaries for certain instructors be raised?

If any school on this list is far below the others in most subjects, it undoubtedly has most excellent grounds for demanding larger appropriations from the legislature. It may also seriously question whether it has a right to ask for the same rating allowed by colleges and universities to schools with a much higher instruction cost. These latter presumably have better-salaried instructors, smaller classes, or a fewer number of classes per week for the instructor, to account for the higher cost.

If any school is high in all subjects, it may profitably ask whether its work is enough better than the others to warrant the extra cost.

Of course it is not asserted that these data represent any final standards in normal-school costs. But to the schools represented, or to others in the same general conditions, the facts should be very valuable as a basis for discussions in the faculty.